National Institute of Environmental Health Sciences

Climate change-related impacts in the San Diego region by 2050

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Abstract:

This paper explores what the San Diego region may look like in the year 2050 as projected changes in regional climate conditions take place. Focusing on interrelated issues of climate change, sea level rise, population growth, land use, and changes in water, energy, public health, wildfires, biodiversity, and habitat, the paper reviews the potential impacts of a changing climate by 2050 and makes recommendations for changes in planning processes at the local and regional levels to prepare for these impacts. The original research for this study was completed in 2008 by a team of 40 experts from the region including universities, nonprofit organizations, local governments, public sector agencies and private sector entities. This paper has now been updated with more recent research regarding climate change adaptation while preserving the integrity of the original research team's work. The simulated impacts discussed in this study are based on regional projections of climate change generated by scientists at Scripps Institution of Oceanography, employing three climate models and two emissions scenarios used by the Intergovernmental Panel on Climate Change. The impacts are discussed in the context of significant regional growth expected during the period as well as an aging population base. Key issues explored in the report include potential inundation of six selected low-lying coastal areas in San Diego due to sea level rise, potential shortfalls in water deliveries, peak energy demand increases due to higher temperatures, growing risk of devastating wildfires, migrations of species in response to higher temperatures in an increasingly fragmented natural habitat, and public health issues associated with extreme temperature events.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

Special Report on Emissions Scenarios (SRES) Scenario: SRES A2, SRES B1

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Health Professional, Policymaker

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Food/Water Quality, Temperature

Extreme Weather Event: Wildfires

Food/Water Quality: Biotoxin/Algal Bloom

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease, Respiratory Effect

Infectious Disease: Vectorborne Disease, Zoonotic Disease

Vectorborne Disease: General Vectorborne

Zoonotic Disease: General Zoonotic Disease

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children, Elderly

Other Vulnerable Population: Chronically ill

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Medium-Term (10-50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content